

Bachelor of Science Computer Science (BSCS)

Introduction to BSCS Program:

The BS Computer Science program at Grand Asian University Sialkot (GAUS) is designed to meet the needs of students seeking careers in computer science. The program provides a rigorous academic experience that prepares students for the challenges of the rapidly evolving field of computing.

The BS Computer Science is a comprehensive four-year degree aligned with the HEC Undergraduate Education Policy v1.1. It is designed to equip students with a solid foundation in core computing principles, alongside specialized knowledge in emerging fields such as software engineering, artificial intelligence, data science, cyber security, robotics, gaming design, etc. The program emphasizes both theoretical understanding and practical skills, fostering innovative problem-solving, software and hardware development, and critical analysis of technological solutions.

Students will engage in hands-on projects, internships, and research activities that prepare them to address real-world challenges in various sectors, including industry, healthcare, entertainment, and national security. The curriculum promotes ethical and professional responsibilities, teamwork, and effective communication, preparing graduates to become adaptable, lifelong learners and leaders in the rapidly evolving field of computing.

The program covers a broad range of topics in computer science, including programming languages, algorithms and data structures, database systems, computer architecture, operating systems, and computer networks. In the core courses, students will learn the fundamental concepts of computer science and gain a solid foundation. GAUS offers multiple specializations in BSCS along with a variety of elective courses. The elective courses allow students to explore specialized areas of interest, such as software engineering, artificial intelligence, data science, computer graphics, computer networking, game development, etc.

Eligibility Criteria:

For admission to BSCS, a minimum of 50% marks in Intermediate/12 years schooling/A-Level (HSSC) or an IBCC equivalent qualification with mathematics is required. However, students not studying mathematics at the intermediate level must pass the mathematics deficiency courses (06 credits) in the first year, **including zero semester**. Additionally, candidates may be required to pass an entry test conducted by the university or admission authority, along with fulfilling any other criteria set by the institution, such as interviews or aptitude assessments.

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Duration:

The minimum duration for completing BSCS is four years. However, the HEC allows a maximum of six years to complete the BSCS degree. In addition, further extendable to another year, subject to the approval of

the university's statutory body. Moreover, a student can obtain an associate degree after fulfilling the requirements of ADP after 4 semesters.

Credit Hours:

Minimum credit hours are 130, including 6 credit hours for the capstone project.

Award of Degree:

A minimum 2.0 Cumulative Grade Point Average (CGPA), on the scale of 4.0, is required for the award of a BSCS degree.

Policy for Probation in Semester:

1. The students acquiring less than 2.00/4.00 GPA in a semester but passing in all papers will be promoted with the condition to achieve more than 2.0 GPA in the next semester, and s/he will be put on probation for the next semester.
2. The students acquiring a GPA of 1.7 and above but failing in any paper(s) will be placed on probation and promoted to the next semester conditionally. They will have to be registered for the summer semester to improve their grade.
3. Students acquiring a GPA of less than 1.7 in two consecutive semesters and failing in any paper(s), even after attending the summer semester for one academic year, will be dropped from the university rolls.

Course Load (per semester):

15-21 credit hours for regular semesters. Credit hours to be offered in summer semesters, as per HEC guidelines (For remedial/deficiency/failure/repetition courses only).

Program Structure:

The degree program follows HEC Undergraduate Education Policy 2023 v1.1 and comprises a minimum of 08 regular semesters (04 years). Universities may offer courses consisting of a minimum of 130 credit hours, provided that the total number of credit hours is reasonably set to achieve the Program Learning Outcomes.

Structure of the BSCS

Areas	Credit Hours	Courses
General Education Courses	34	15
Computer Science Core / Major Courses	48	14
Interdisciplinary / Allied Courses	12	04
Specialization Electives	24	08
Professional Certification	03	01
Field Experience / Internship	03	01
Capstone Project / FYP	06	02
Total	130	45

Requirement of Field Experience / Internship:

It is a mandatory degree award requirement of three (03) credit hours for the BS in Computer Science. Internships of six (06) to eight (08) weeks must be graded by a faculty member in collaboration with the supervisor in the field. This requirement cannot be substituted with additional coursework, capstone, or project work.

Requirement of Certifications:

It is a mandatory requirement of three (3) credit hours for BS Computer Science students to earn industry-relevant certifications, preferably through recognized national bodies such as Pakistan Software Export Board (PSEB), Pakistan Software Houses Association (P@SHA), and the Ministry of Information Technology and Telecommunication (MoITT), or international certification bodies such as CISCO Systems, Microsoft, Oracle, etc. These certifications are aimed at enhancing employability by equipping graduates with practical, job-ready skills in line with evolving market demands. The certifications may be considered for credit substitution (a minimum of one and a maximum of six credit hours) upon course mapping and approval by the relevant statutory bodies of the university. In the CS program, students may opt to replace certain electives with internationally recognized certifications equivalent to three (03) credit hours. This requirement cannot be substituted with additional coursework, internship, or project work.